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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,186	02/27/2004	Ki Suk Sung	4823-0101P	4592
2292	7590	09/22/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			CHIEM, DINH D	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/787,186

Applicant(s)

SUNG ET AL.

Examiner

Erin D. Chiem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species (1) in the reply filed on July 18, 2005 is acknowledged. The traversal is on the ground(s) that

- 1) The election requirement is improper because Applicant is required to elect between groupings of claims; and
- 2) The number of species within the application is undue burden on the Examiner.

This is not found persuasive because:

- 1) The restriction requirement was restricted by the patentably distinct species, which are *drawn* to the indicated claims. The Examiner explicitly stated the relevant claims directing to the species for the purpose of assisting the Applicant to expedite the election process. The restriction practice only requires the Examiner to state the patentably distinct inventions or species of invention(s) within the application and the Examiner is not required to map out the claims that are drawn to the patentably distinct inventions or species of invention(s).

- 2) The Examiner finds that the search for packaging of the laser module is a divergence of subject matter with regards to the operation of the laser module. Therefore the Examiner determined that the search is burdensome.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the isolator, as claimed in claims 6 and 11, must be shown or the feature(s) canceled from the claim(s). Also, claims 1 and 7 is claiming the laser module package was made for converting an electrical signal into light, however, there is no structural evidence in the drawing to indicate this limitation. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

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The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inokuchi et al. (US Patent 6,332,721 B1) in view of Kikuchi (US Patent 5,333,224).

Inokuchi teaches a laser module package comprising a laser module, a first lens 1C for focusing the light output from the laser diode 1A, and a casing 7 for sealing and fastening the first lens and surrounding and sealing the laser diode; a correction lens 3A placed behind the first lens for outputting parallel light; a second lens for focusing the parallel light output from the correction lens and an optical fiber fixed so that a center of an end thereof is positioned at a location where the light output from the second lens is focused 2A.

However, Inokuchi does not teach the laser module package is made for converting an electrical signal into light.

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Kikuchi teaches a photoelectric converter connecting device comprising a lens held within the body, which acts as both a correction lens and a focusing lens coupling the light from the laser diode to the aligned optical axis of the fiber, see Fig. 1. Furthermore, Kikuchi's module further comprises a photoelectric convert 1 which converts the electrical signal from 1D into light.

Since Inokuchi and Kikuchi are both from the same field of endeavor, the purpose disclosed by Kikuchi would have been recognized in the pertinent art of Inokuchi.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ a photoelectric converter into the laser module to convert electrical signal into an optical signal as one of many applications of a laser module. **The motivation** for employing a photoelectric converter within the laser module is the convenience of integrated opto-electronics, which provides components small enough to fit into the laser module. Furthermore, electrical energy is the most commonly known source of energy that is readily available that all optical components use to operate, thus, there is a need to convert electrical signal into optical signals for the necessary applications.

Claims 3, 4, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inokuchi in view of Kikuchi as applied to claims 1 and 7 above, and further in view of Ouchi et al. (US Patent 5,737,133).

Inokuchi and Kikuchi together teach a laser module for converting electrical signals into light having a first lens for focusing the light output from the laser diode, a casing for sealing and fastening the first lens, a correction lens placed behind the first lens for outputting the parallel

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light, a second lens for focusing the parallel light output from the correction lens, and an optical fiber fixed to couple light from the second having the optical axis aligned.

However, neither Inokuchi nor Kikuchi teach the correction lens is sealed in and fastened to a sliding member that is movable along a guide tube at a location where the parallel light can be output from the correction lens.

Ouchi teaches a laser module having a laser diode 23 coupling to a correction lens 2 wherein the lens is fastened to a sliding member (fig. 1; 7), made of stainless steel (col. 2, lines 43-44), that is movable along a guide tube 6 for the purpose of making a good weld to hold the focused first lens in place with respect to the laser diode and the fiber.

Since Inokuchi, Kikuchi, and Ouchi are all from the same field of endeavor, the purpose disclosed by Ouchi would have been recognized in the pertinent art of Inokuchi and Kikuchi.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a lens holder as the sliding member to adjust the focus of the first lens versus not having a lens holder at all. **The motivation** for using a lens holder is that laser welding is a better method of securing the first lens in place versus using resin that can be messy and damage the lens. Furthermore, the friction of sliding action will only damage the lens holder and not the periphery of the lens.

Claims 5, 6, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inokuchi in view of Kikuchi as applied to claims 1 and 7 above, and further in view of Souda et al. (US 2003/0210874 A1).

Inokuchi and Kikuchi together teach a laser module for converting electrical signals into light having a first lens for focusing the light output from the laser diode, a casing for sealing and

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fastening the first lens, a correction lens placed behind the first lens for outputting the parallel light, a second lens for focusing the parallel light output from the correction lens, and an optical fiber fixed to couple light from the second having the optical axis aligned.

However, neither Inokuchi nor Kikuchi teach the laser module further comprising an optical isolator placed between the first lens and the correction lens or placing the optical isolator between the correction lens and the second lens.

Souda teaches a laser module having a ball lens to collimate the light from the laser diode and also to correct the light signal for coupling further onward to the fiber. Also, Souda teaches in Fig. 8 reference number 25 is an optical isolator placed between the first lens and the correction lens to prevent backreflection that may destabilize the lasing of the laser diode 7 [0061].

Since Inokuchi, Kikuchi, and Souda are all from the same field of endeavor, the purpose disclosed by Souda would have been recognized in the pertinent art of Inokuchi and Kikuchi.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art learn from the teaching of Souda that by strategically placing the isolator immediately before the first lens to prevent backreflection of the optical signal that may destabilizes the laser diode. Also, one of ordinary skill in the art would recognize that a modification could be made by placing the isolator between the correction lens and the second lens for the same purpose. **The motivation** for employing an isolator is well-known in the optics art for the purpose of preventing backreflection of the optical signal, thus provide a stable photoelectric converting laser module.

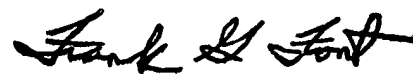
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin D. Chiem whose telephone number is (571) 272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin D Chiem
Examiner
Art Unit 2883



Frank G. Font
Supervisory Primary Examiner
Technology Center 2800